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Title : Patterns of seasonal stranding in true seal populations in the Western Mid-Atlantic region (USA): abundance, diversity, location, seasonality, age and gender

Category : Ecology

Student :

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Abstract : Strandings of migrating marine mammals provide unique information. In New Jersey and the Mid-Atlantic region, seal strandings had recently increased in both abundance and diversity, with northern species added to the harbor seals usually present. We focused on where and when the seals stranded, and their profiles of age and gender, for three seasons (2000-03). Stranding locations were plotted (ArcView GIS), and classified as ocean beach or non-beach sites (back bay, river, or large bay). Between 2000-03, 151 strandings were reported (annual range 32-69; 92% in New Jersey); this did not approach earlier increases (over 2000%, 1985-2001). Species composition was also stable during the study, after tripling in the late-1980s. Harp and harbor seals were most abundant (42% each, *Phoca vitulina concolor*, *Pagophilus groenlandicus*) with gray and hooded seals lower (11 and 3 %, respectively; *Halichoerus grypus*, *Cystophora cristata*: all Phocidae). Seals stranded throughout most coastal area available in New Jersey. Scattered strandings occurred in Delaware, Virginia and North Carolina. Seals stranded almost twice as frequently on ocean beaches as on non-beach sites (66% vs. 34%; all species and seasons combined). All species stranded more often on beaches. Seals stranded between fall and spring. Harbor seals arrived earliest (November), and stranded over the longest period (six months); Gray seals arrived latest (March). All age-classes of seals stranded. Subadults were most abundant (91%), with adults and pups less abundant (6.2% and 2.7% respectively). Males and females stranded in approximately equal proportions. Neither the sex ratio nor the presence of all age-classes supports the leading theory that strandings are primarily juvenile males. The dominance of beach strandings was believed due to availability, access and currents. These results contribute to understanding of population dynamics of these seals and provide much-needed information on their activities away from breeding areas.